National Strategy
South Africa

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Acacia National Strategy: SOUTH AFRICA

1.0 Mapping the Information Society Environment in South Africa

This overview of the information society environment in South Africa is intended to set the scene for the South Africa Acacia Strategy which follows in Chapter 2. The overview focuses on: telecommunications policy; information infrastructure; technology and tools; and applications and content.

1.1 Telecommunications Policy

The telecommunications policy environment in South Africa has recently experienced a dramatic transformation. In 1995 the South African Department

of Posts, Telecommunications and Broadcasting began a Green and White Paper process for the formulation of a comprehensive new telecommunications policy. The process, conducted under the auspices of the IDRC-funded National Telecommunications Policy Project (NTPP), has yielded the Telecommunications Policy Act of 1996.

With the passage of the new Telecommunications Act in December 1996, substantial changes are now underway within the telecommunications sector. The following elements of the new legislation are generally considered to be the most important: (1) an independent regulatory body, called the South African Telecommunications Regulatory Authority (SATRA) is being developed and staffed; (2) a Universal Service Agency (USA) intended to promote universality of access starts work on February 3; (3) Telkom SA, Ltd. is authorized to acquire a strategic equity partner (SEP) which will own 30%, with another 10% share for South African investors (focusing on Black economic empowerment); (4) immediate competition is allowed in Customer Premises Equipment (CPE) and Value-Added Networks; (5) phased in competition will be allowed in international long-distance; and (6) new cellular licences may be issued in two years. In one of the more controversial elements of the new bill, the ending of TelkomÊs monopoly over the public switched telephone network (PSTN) has been left for negotiation with the SEP.

A remaining challenge immediately facing the South African telecommunications policy and the newly formed Department of Communications is to formulate a formal offer to the World Trade OrganisationÊs (WTO) Group on Basic Telecommunications (GBT) which has resumed negotiations on global telecommunications liberalization in Geneva.

1.2 Information Infrastructure

Being one of the top 20 countries in the world for the number of Internet hosts (number 14 behind after Switzerland and before New Zealand), South Africa has developed a substantial amount of experience in this area. A vibrant Internet user community was first established some years ago within the academic community, who were the only ones with local access to full Internet. Current estimates put the South African user community somewhere between 250,000 and 450,000.

A number of store and forward dial-up services operated for the NGO community and computer enthusiasts, and some businesses used CompuServe (before it had full Internet). As more of these services sprung up, it appeared that Telkom had agreed not to apply the letter of the law regarding third party resale, and around the same time UniNet (the academic network) relaxed its membership policies a little, allowing the NGO E-mail

service provider (SANGONet) to become the fist non-academic/government system on full Internet in South Africa.

Shortly after this breakthrough by SANGONet, two companies, Internet Africa and Internet Solutions, became the first fully-commercial Internet Service Providers (ISPs) in South Africa. Being ahead of the worldwide 'switch-on' to the Internet, they were in a position to gain the bulk of the market as interest in the so-called "information superhighway" picked up. However the Internet market has become increasingly competitive. Currently there are almost 50 independent ISPs operating within the country. This number includes a number of multinationals, some of whom have purchased large shares in local companies. With so many service providers, a segmentation of the market can be observed - there are the premium services which provide more international bandwidth and more modems per user, and the smaller, cheaper services which have slower links and fewer modems per user.

Since the beginning of 1996, Telkom has been offering a dial-up and leased line Internet service under beta test, and has subsequently launched the South African Internet Exchange (SAIX) as a full ISP. Also, Telkom has launched its leased line service with a novel pricing system; a low cost service (for less than $1000 a month) which provides 64Kbps nationally, but only 16Kbps on the International link, and a high priced service ($4000 /month) for a full 64Kbps on the international link. This service, combined with a rapid roll-out of national Points-of-Presence (POPs) which eclipses the commercial service providers offerings, resulted in the formation of the Internet Service Providers Association (ISPA), an association of South African ISPs. The ISPA brought Telkom before the Competition Board arguing that Telkom was exploiting its monopoly position in the supply of basic telecom infrastructure, thus giving them an unfair advantage in the Internet market.

The case before the Competition Board is unresolved at present but it seems that by retaining its monopoly on international data traffic, Telkom is vulnerable to attacks such as that from the ISPA, who rest the bulk of their case on cost of access to international circuits. Paradoxically, the monopoly on international circuits is also having a negative effect on Telkom's potential revenues, since other companies are restricted from bringing in traffic from the rest of the African continent into South Africa where it would then use Telkom circuits.

While costs of access are generally affordable in the major cities due to the presence of local POPs, there is no low cost method of access outside of these areas. Access through cellular phone and Beltel (the videotex service with a 800 number) has reduced costs and expanded the area of

coverage a little, but has not brought costs down to anywhere near the levels of those with local dial access. The telephone network is also very under-developed in many of the rural areas, especially in the former homelands.

The topology of South Africa's Internet consists of 6 'top-level' operators with their own international leased line Internet links which service dial-up users as well as a number of 'secondary' ISPs who share the international bandwidth of the top-level ISPs. The local links (peering points) between the ISPs under different top-level providers are rare and those that do exist are of low capacity, which results in very slow response times when users of an ISP of one top-level provider attempt to connect to ISPs on a different top level provider. This is because the traffic must either travel through local links which are usually overloaded, or because the traffic must travel across the international links to the US and back. UniForum has established a no charge peering point available to all ISPs who wish to use it but competitive pressure seems to have discouraged its use, at the expense of users who can wait many minutes to download a single page from another site across town.

International connections even from the US and Europe are often no better; there are many instances where users in the US and Europe have written to say they have given up trying to access web pages on ISPs in South Africa because the response rate is too slow. Since this is also the case for most attempts to access the web sites of other African countries from South Africa, it is clear that substantial efforts must be made to improve sub-regional linkages if there is to be any serious Internet based information exchange in the region.

With it's low-cost international leased lines to neighbouring countries, and excess telecommunications bandwidth on the fibre link to Europe and the US, South Africa has become the Internet hub for the sub-region. Although some of the surrounding countries can only provide analogue links, SA is likely to expand its role further into the continent with the two VSAT groundstation hubs in operation; one by the PTT Telkom and the other by the transport parastatal, TransNet, which operates a satellite communications subsidiaryùTranstel.

Telkom's VSAT hub will be used to upgrade the analogue link to digital for the ISP in Zambia. Transtel is currently barred from bringing third party traffic into the country but is unofficially providing a non-commercial Internet link from the South African academic network (UniNet) to the University of Dar es Salaam in Tanzania.

The South African parastatal research and development group CSIR has

developed a very active marketing programme toward the rest of Africa and has signed up agents in 9 African countries (Gabon, Mauritius, Zimbabwe, Swaziland, Botswana, Malawi, Mozambique, Kenya and Egypt) for its WorldNet Gateway, CompuServe and WorldNet Africa Internet information service products. The WorldNet gateway product allows offline access to major commercial databases on the Dialogue system, cutting access costs by 75%. All of the agents are also being supported by the CSIR to develop full Internet connections in order to supply the WorldNet Africa Web-based value added Internet service. Currently the major focus has been on selling CompuServe, but there are only about 500 users in total across all of the above systems, partly reflecting the high cost of using such 'value added' Internet services. The Mauritius hub plans to provide CompuServe and Internet to the Indian Islands and the Kenya hub plans to provide links to 8 other East African countries. Recently, the CSIR announced its plans to sell WorldNet Africa and CompuServe to a South African based company Electronic Media Networks (M-Net). The status of WorldNet Gateway is still uncertain.

1.3 Technology and Tools

Much of the development in the area of the technology and tools to facilitate the use of information and communications technologies within South Africa is coming from the private sector. However, since the government does not require R&D figures to be made public, it is difficult to assess the actual level of R&D spending in the country. However, of those figures available, one of the leading companies in R&D in South Africa is Denel Informatics, with 1995 R&D capital expenditures nearing R56,000,000. Smaller companies are beginning to show interest in developing technology products to facilitate Internet use by non-literate and non-English-speaking populations.

The CSIR (formerly the Council for Scientific and Industrial Research) is the primary government parastatal conducting research and applications development in information and communications technologies. It has focussed not on new technology development but on technology modification, adaption and application in both content and connectivity areas.

At the community level, training in ICTs is mostly coming from the South African NGO Network (SANGONet) and the Bridges network. These two NGOs provide the bulk of the ÈhandÊs onÊ support and training for the South African community-based organisations (CBOs) and NGOs. There is a substantial private sector training industry but it focuses more on computer skills than on connectivity and access to information.

There is a significant donor presence in South Africa, both from the local

and international community. In addition to governmental and intergovernmental agencies, there are several private international foundations with a presence in the country and working on information and communications technology issues. But no agency has made information and communication issues a central area of concern.

1.4 Applications and Content

The South African government has attempted to identify its priority areas relating to the Information Society. A number of key focus areas have emerged, such as: governance, education, health, employment, environment and natural resources, agriculture, industrial development and trade. It has also launched a number of commissions to study broad information priorities, such as freedom of information and the governments communications structures. Application projects have begun to emerge, particularly in the areas of education and health.

The Ministry of Education commissioned in 1996 a thorough study of the role of technology in education and is now considering its results. School networks are proliferating, with the strongest located in the Western Cape. UNISA (The University of South Africa) has a long-established correspondence program which is the test bed for a number of ICT initiatives. The TelematicsÊs Consortium for African development, convened by CSIR, brings together a wide range of organisations to pilot hardware and software to support education and information access. The five tertiary institutions in the Western Cape are creating a network among themselves which will eventually be used to develop supporting programs in nearby townships.

Healthnet (SatelLife) provides the main infrastructure to link isolated medical practitioners among themselves, with specialised health care facilities and to international sources of information. The Ministry of Health is developing a National Health Information System aimed at meeting management needs, measuring the health status of the population and monitoring progress towards RDP health goals. A few experiments with tele-medicine, tele-radiology and on-line consultation have been conducted; the potential of such techniques to address the health needs of poor communities is beginning to be recognised but projects are not specifically addressing those needs.

Connectivity problems exist within government and exacerbate the communications problems inherent in the fact that the government is split between Capetown and Pretoria. There is as yet no government network. The Speaker of Parliament has received funds from the European Union to transform the information structures and services of the national

parliament and is very aware of the need to reinforce communication between parliamentarians and constituents. At the provincial level there is keen interest in Èone stop shopsÊ for government information. North West Province and Northern Cape are the most active in this regard. NW is already experimenting with information delivery through kiosks. NC is examing service delivery through community centres.

Small business is also an area that is attracting ICT attention particularly within the context of the Department of Trade and IndustryÊs Local Business Service Centre program. Databases are available to support advertising and promotion, to provide detailed company information and to support performance analysis. The cost of implementing on-line services is nevertheless a barrier to many of the small LBSCs which are attempting to provide service in the rural areas.

This is not an exhaustive study of ICT development initiatives in South Africa. Further information is contained in studies commissioned to support the development of Acacia.

1.5 Key points for the Acacia Strategy in South Africa

* telecommunications policy encompasses a clear focus on universal access and the machinery to extend that access thus providing a supporting framework for the exploration of ICT use at the community level;

* the not-for-profit Internet Service Provider community is facing pressure from an increasing number of private sector operators but these are directing their services mainly to the high-end urban markets and are not actively marketing to communities;

* R&D, outside of CSIR and a few small companies, is not addressing community needs for adapted and appropriate technologies and interface tools in any significant way; the same is true of the private sector training establishments;

* applications are developing, particularly to meet education needs; while a policy framework to stimulate their development and pilot their implementation does not yet exist the Department of Education is beginning to equip itself to exploit ICTs for education;

* there is limited but evident private sector interest in stimulating the development of community access points as both market conduits and stimulators of local enterprise;

* while many donors are supporting individual initiatives that involve ICTs, none has developed an integrated and focussed program in this area - consultations with the local donor community have confirmed an interest in a more collaborative approach.

2.0 Acacia National Strategy for South Africa

2.1 The Strategy in Brief

The goal of the strategy is community empowerment: stronger community voices in political dialogue; increased capacities to solve community problems and reduce community tensions; extended access to basic services including education and health; and promotion of income generation opportunities.

Multi-purpose tele-centres are a key means of achieving this goal in a sustainable fashion because of their capacity to support the growth and concentration of community markets through the provision of a wide variety of public and private goods and services. Extending the Telecentre concept to address specific development problems, particularly but not only in the field of education, is the second main means for achieving the goal.

The private sector can be involved in implementing telecentres through franchising arrangements and as providers of appropriate technology and content. They should be a part of the debate as the concept is developed and tested..

The strategy will address the barriers to successful implementation in three important areas:

* policy;
* the availability of appropriate technologies; and
* human resources.

It will attempt to strengthen research capacities around ICT and development issues, particularly in the NGO sector.

The strategy will apply, in all community-based projects and in all consultative policy processes, a proven and widely-used methodology to ensure that community voices are at the heart of project design, adaptation, impact assessment and evaluation (see 2.8 Sentinel Community Surveillance).

Finally, the strategy will be guided by an advisory group which includes representatives of all interested South African sectors.

The rest of this document expands on the different components of the strategy and identifies project proposals that form the Acacia South Africa pipeline.

2.2 South African Acacia Advisory Group

Overall guidance for implementation of the Acacia South African strategy will come from the South African Acacia Advisory Group. One element to emerge out of this process of research, consultation and analysis has been the notion that the application of ICTs to development requires that we break out of the mold of single sector consultation and bring together representation from the private sector, NGOs, CBOs, grassroots organisations, government and donors. The idea is to provide a forum in which particular groups of actors can form around particular opportunities. The Advisory Group will serve as such a forum.

2.3 Implementing the Telecentre Concept

IDRC is currently funding a study of Multi-Purpose Community Centres (MPCCs) to develop an inventory of initiatives within the country. The project will assess the status of these centres, analyse best practices and identify lessons learned. More importantly, the study will provide a basis from which the Universal Service Agency can select pilot initiatives.

The new Telecommunications Act mandates the development of a Universal Service Agency (USA) which will have as one of its primary responsibilities the achievement of universal access to the information infrastructure available in South Africa. Telecentres have been given high priority as one of the key mechanisms for achieving this goal. The South African Acacia program will partner with the USA to ensure that community voices shape the design and management of the telecentre, that adjustments can be made to reflect changing community needs and that there are regular assessments of impact. The assessment module will be incorporated in a cross section of telecentre types including, for example, post offices, schools, clinics, traditional community centres and private franchises.

Exploring the capability of different telecentre models to meet real community needs, provide income generation opportunities and develop markets for information products and services will be at the heart of the Acacia South Africa Strategy.

In applying or extending the Telecentre concept, various types of ownership arrangements will be explored, especially those which highlight public and private sector partnerships. First results of research conducted on public/private sector partnerships to promote service delivery suggest that

such partnerships work best when they address local level needs.

The replicability and sustainability of telecentres in South Africa will be enhanced through three considerations. The first is the early participation of the private sector in the planning and implementation of new telecentres and the extension of existing ones. By involving the private sector, issues such as business planning, profitability, ownership and quality will be addressed. Second, a sensitization process must be carried out which will continue to highlight the benefits of telecentres to both the communities in question and to the country as a whole. This awareness process can take place in isolation or in conjunction with an overall awareness building campaign around the information society policy process (2.5.1). Third, one of the surest factors in securing the sustainability of the telecentres is through their usefulness to their communities. Through the use of the SCS methodology, these telecentres will be continuously evaluated to ensure that they are providing the kinds of information and services that communities need and want. Finally, the replicability of these telecentres will be largely dependent upon our ability to analyse and document the various initiatives, draw out lessons learned from each and highlight best and worst practices.

2.4 Extending the Telecentre Concept

The strategy also aims to contribute to an extension of the telecentre concept to meet particular needs within South African communities - needs ranging from education and health to reducing community violence. While the main emphasis will be on education and communities of schools and educators we will also explore the relevance of connectivity, through telecentre type approaches, to other development issues.

2.4.1 Education

SchoolNet South Africa

One clear application of extending the telecentre concept is the provision of electronic mail and Internet access to schools and the development of networking among them. Currently, there are four existing school networks with formal constitutions and organisational structures (Western Cape Schools Network, Gauteng Schools Network, Pretoria Schools Network, and the Independent Schools Network). Three informal school networks exist (Eastern Cape Schools Network, KwaZulu/Natal Schools Network and the Free State School Network). These networks have expressed the desire to form a national schools network body. IDRC sponsored a meeting on 21 January 1997 with representatives from the most active schools networks. An ad hoc steering committee has been formed and is mandated to take the process

forward. In addition to a formal national schools network structure, which has its own benefits, the project aims to bring connectivity to at least 200 schools in South Africa. This connectivity increase will be achieved by each active member running a project which pilots the particular best practice implementation models each has developed thus far.

Curriculum development

Complementary to the SchoolNet project is a proposal emerging out of IDRC-supported work on distance education methodologies and technologies. This project would implement and evaluate the Technology Enhanced Learning Initiative (TELI). The project emerged from a study undertaken by the South Africa Centre for Higher Education (SACHED) and SAIDE (South African Institute for Distance Education) for the Department of Education. The Department has now set up a working group to explore the policy implications of using ICTs to manage collaborative approaches to curriculum development. The project would incorporate a common web-based set of curricula and a curriculum development methodology, including organisational mechanisms and technological tools. It would aim to facilitate curriculum revision and adaptation.

Learning Centre partnerships

While much attention is being paid to the concept of community-based learning centres, little has been paid to the private sector usage of such centres. The objective of this project is to create an electronic classroom in the workplace which meets the needs of management, the unions and the workers. Both management and the unions realise that to compete in the international environment, workers need to be trained in information technology. These learning centres should start at a basic level in their training courses, such as ABET (Adult Basic Education and Training), viz literacy and numeracy training. The intention is to use technology based Internet working solutions to provide this type of education with computer literacy and information access being one conjunctural output of this process. This project involves substantial public and private sector partnership and has the potential of employment creation through extension of the learning centre into the community as a small business

2.4.2 Other development applications

Wild Coast Spatial Development Initiative

South African government and planning authorities intend to promote the Wild Coast region of the KwaZulu/Natal province as one of a number of Spatial Development Initiatives (SDIs) in the country. This SDI has a

potential comparative advantage in the agricultural and eco-tourism sectors. Priority objectives are to: maximize incremental employment/self-employment opportunities; empower resident populations; ensure equitable participation in the SDIÊs economy. Planning authorities hope to design and implement a Wild Coast SDI strategy, but now lack an effective and manageable methodology for field data acquisition, communications and dialogue with the approximately 15,000 local inhabitants. It is critical that SDI planning be firmly rooted on and substantively respond to local interests, perspectives and priorities. The Sentinel Community Surveillance (SCS) methodology, combined with ICT tools, can satisfy this information and communication gap, foster local participation and provide an unprecedented opportunity for local communities to monitor, influence and take ownership of the entire SDI process.

Controlling Malaria: Bednets in Africa (ICTs, SCS and NetGain)

IDRC is funding the Mapping Malaria Risk in Africa (MARA) project, a GIS platform providing spatially referenced static and predictive data indicating malaria prevalence and risk across sub-Saharan Africa as an aid to targeting and making best use of scarce malaria prevention and control resources. The Medical Research Council of South Africa is leading the implementation of MARA in partnership with other African malaria research institutions and national Departments of Health. NetGain for Africa Task Force is a related initiative being planned by PATH-Canada. NetGain is aimed at assisting countries in sub-Saharan Africa to design, implement and monitor national malaria prevention strategies employing insecticide treated bednets (ITNs) - a technology developed with IDRC and WHO funding support. NetGain will: serve as a repository and clearing house for information pertinent to the utilization of ITNs; provide technical assistance and advisory services to national malaria prevention programs; act as a catalyst and focal point for networking and promoting complementary action amongst actors involved in promoting ITNs (eg: international donors and health NGOs, African Departments of Health and health agencies, and the private sector). MARA and NetGain are mutually reinforcing: NetGain will make extensive use of MARA data for program planning, monitoring and evaluation purposes; NetGain will feed MARA with new spatially referenced data.

There is enormous potential to leverage the future impact of both MARA and NetGain across Sub-Saharan Africa by integrating ICTs with tested field data survey tools and methodologies (eg: CIETcanadaÊs Sentinel Community Survelance (SCS) methodology) and incorporating these into the MARA and NetGain framework. ICTs would facilitate:

* a) the systematic and cost effective acquisition of a wide range of community level data (eg: about episodes of malaria, availability of ITNs, behavioural dimensions of ITN use, etc), data which would be captured through an ICT-based SCS component, recorded and regularly updated on MARA. ICTs/SCS would enable "high grade" (eg: widely consistent, statistically valid) hard field level data to be cost-effectively obtained on an iterative, quick cycle time basis for monitoring the actual progress and impacts being made by ITN-based malaria prevention programs across sub-Saharan Africa (such data would be disseminated, at a strategic level, through NetGain). NetGain/MARA presently lacks this much needed "hard field data" acquisition capability, a bottleneck that ICTs/SCS can effectively overcome;

* b) through the combination of ICT connectivity and the ICT-based application of the SCS methodology, vertical information flows and communications pertaining to ITN-based malaria prevention programming between firstly, MARA/ NetGain and national and district level authorities and, secondly, between national and district level authorities and community on the ground in Africa;

* c) lateral information and communication flows between country-level malaria prevention practitioners, malaria researchers and malaria prevention programs across sub-Saharan Africa. This networking and information sharing need was cited as the highest priority by African malaria researchers and practitioners who attended the January 1997 International Malaria Conference in Dakar, Senegal; and, most importantly,

* d) information and communications flows about malaria and ITNs between communities on the ground affected by malaria, and between these communities and higher planning authorities, to "put the community voice into malaria program planning" and mobilise and empower local community action in tandem with health authority action for malaria prevention and control.

Internet/Community Radio Linkages

The Internet can prove to be a powerful tool for overcoming the political, economic, and logistical barriers which have limited South-South and South-North information flow in the past. Linked to radio its power can be enhanced many times. Radio remains the most effective medium for

distributing information to marginalised groups in Africa. It overcomes the barriers of distance, cost, and illiteracy which make other forms of media largely the domain of literate urban elites. In most Eastern and Southern African countries, existing radio transmitter networks reach between 60 and 90 percent of the populations. Internet can provide a powerful programming tool for community broadcasters; communities can exchange relevant program content and access a much wider audience with their local news and concerns.

Experiments are underway to link community radio to the Internet. The Acacia strategy will reinforce these linkages by supporting a state-of-the art study which will feed into the upcoming Pan African Conference of Community Broadcasters. The Conference will provide a forum for discussing the results of the study and identifying promising pilot projects for which Acacia resources will be earmarked.

Electronic Gender Information Network

An effectively coordinated, an electronic network of information on developments in the field of gender equality would greatly enhance womenÊs ability to act strategically and in a coordinated fashion. This project is designed to work with Comsec to support the development of a Gender Information Network. Initially, the project will bring together the gender units in national, provincial, and local governments into a functioning network. The network will be operated by SANGONET and managed through an advisory committee. The Goal of the project is empower women in South Africa and to strengthen their voices in social, economic and political circles. This project could also link with the Chatsworth WomenÊs Computer Communications Project which is designed to increase the computer literacy of women in a selected community in KwaZulu/Natal through computer training and community-based project management.

Social Tensions Within Communities

In destabilized societies, community cohesion is often substantially lost. Population migration has similar effects. Yet, traditionally, the existence of "community" (as opposed to "society") and community cohesion was central to individual and family wellbeing. In transitional societies (and even, as we have seen, in modern industrial societies), the ability of the state to provide essential public services and security is often inadequate. Where, in these cases, "community" also ceases to function, individuals are effectively disempowered in relation to securing basic needs.

This is most shockingly evident today in densely populated informal settlements in South Africa where one in three women are expected to be

victims of rape and the child abuse rate is among the highest in the world (and rising). The state lacks the resources to prevent or even meaningfully mitigate the effects of this violence. The lack of "community" (eg: shared commitment) severely limits the potential for community-based solutions on the scale needed.

Used in combination with public communications/media, an ICT-based SCS application has the potential to overcome this impasse and "break open" ways of finding creative "community"-based solutions to this particular rape and child abuse situation. It would offer intriguing conflict resolution and "healing" potential. It would create a partnership between the state, the victimized and those at risk in a joint search for solutions aimed at "prevention first" that would, in their implementation, be empowering and rebuilding of "community". The more evident, stable and cohesive the community, perhaps the lower the risk of rape and child abuse. Perhaps most significantly, this kind partnership approach to "solution seeking and action" - made possible by the application of ICTs and SCS - for this kind of societal crisis would enhance the legitimacy of the state, a recognition of the centrality of community to citizen welfare, make for more "community regarding" state action, and entrench democracy (and the attendant notions of individual security, equality, rights) "in community".

Government Information and Service Delivery

Northern Cape is the only province which had to be built from a zero base. It is the biggest province in the country and has the smallest population (760,000). The population is widely dispersed. It is not surprising therefore that the province has adopted the concept of a horizontally-integrated needs driven public service, supported by ICTs, as its service delivery model.

NC has identified Service New Brunswick as a source of expertise and experience in elaborating the model. A three phase program has been defined over a ten year period to define a detailed pilot implementation plan and a strategy for province-wide implementation. There are aspects of this program which are of interest to Acacia and could lead to project proposals down the line. Given the interest in other countries in the region in the SNB model there are interesting possibilities for Canadian partnership.

Parliamentary Information

The Speaker of Parliament has approached IDRC for advice on transformation of the information processes and structures of the national Parliament. The Speaker recognises that such transformation and modernisation is a first step on a road that will lead eventually to a much more active dialogue

between MPÊs and constituents. and we can expect projects to emerge during the life of Acacia to address this key concern.

2.5 Reducing Barriers

While telecentres provide an excellent vehicle to address many of the concerns and objectives of the Acacia initiative, there are important barriers which must be overcome before their potential can be fully realised. These barriers can be grouped generally into three categories; policy, technology and human resources. Policy barriers include the telecommunications legal and regulatory framework and the approach to the Information Society. Technology barriers include insufficient access to information infrastructure or the appropriate hardware and software to fully utilise the infrastructure. Human resource barriers are the deficiencies in capacity to utilise the information infrastructure and the need for training in these areas. The following projects are designed to reduce these barriers.

2.5.1 Policy

IDRC has a reputation in South Africa as a facilitator of consultative policy processes. The activity proposed below would continue IDRCÊs contribution in this vein. It would also elucidate broad information society issues and enable us to explore the extension of stakeholder interventions to the community level.

National Information Society Policy Process

Following on the precedent set by the IDRCÊs support for the development of a new telecommunications policy framework for South Africa through the National Telecommunications Policy Project (NTPP), the Centre is now discussing support for the development of a National Information Society Policy. This National Information Society Policy Process is being led by the new South African Department of Communications (DOC). To further open up the stakeholder and consultative process, the National Information Technology Forum (NITF), an NGO representing government, private sector, organised labour, civil society, and academia, will coordinate civil society input. The DOC is committed to a process which assures the involvement of all relevant government departments, including education, health, arts, culture, science and technology, trade and industry, finance, and environment as well as of all provincial governments. The involvement of the departments will stimulate government focus on the sectoral impact of ICTs and the need to develop content and applications to meet sectoral needs.

The first phase of this project would produce a green paper identifying, and posing questions around, the priority information society issues for South Africa. One such issue will be affordable access to and effective use of ICTs at the community level. The green paper is targeted for presentation to the ITUÊs Africa Telecom È98, which will be held in South Africa in May 1998. The main goal of the first phase of the information society policy project is to achieve significant and inclusive public debate on the social, political, cultural and economic aspects of the emerging Global Information Society and to clarify the issues around the development of a National Information Society. The White Paper phase of the project would aim at specific policy recommendations.

As with the National Telecommunications Policy Project, processes will be documented for dissemination within the region.

2.5.2 Technology Development

This area of activity seeks to stimulate the development of tools and technologies which will facilitate the use of the ICT infrastructure, and the information available through them, by people with limited literacy skills or whose mother tongue is not English. They represent an initial and by no means exhaustive set of those technologies that appear promising in the South African environment.

Community Access to GIS data

Geographic Information Systems (GIS) databases which profile small areas can be useful tools to promote community awareness and reinforce community planning. The Human Science Research Council (HSRC) has created GIS databases profiling magisterial districts in two provinces and mapping development initiatives onto the basic development data. This is a potentially powerful tool for community planning - but GIS is not easy to use. The purpose of this project is to extend the coverage of the data to the remaining provinces and to produce and test an interface which facilitates community use by providing contextual information and comprehensible dialogue. The interface once available could be applied to other GIS databases, for example in the malaria project identified above.

Cellphone Connections

Lack of fixed phone lines is a serious barriers to connectivity in rural secondary and tertiary educational institutions in South Africa. A two-school pilot project is testing the addition of e-mail connectivity to a rural schoolÊs computer system using cellular telephony. The cellular phones have been installed with a data connection to the singe computer at

Michakgasi High School (GaRankuwa) and to the Local Area Network of Prestige College (Hammanskraal), with the appropriate software required to send and receive E-mail. The results of these pilots will be assessed to determine the feasibility of extending the approach. Interesting lessons have already come to light concerning the policies and practices of the cellular operators. Usage within the schools, by staff and students, is also being measured, and will shed some light on the impact of access to e-mail rather than full Internet.

Audio Interface Development

Major obstacles to access by poor communities to the Information Society are lack of literacy and the language barrier. In order to overcome this barrier, particularly in Africa where the oral tradition is very strong, there is a need to focus on audio technologies. The current audio focus on the Internet is streaming audioùor listening to speeches, radio broadcasts, etc. There is not a focus in presenting the information that is present in a page audibly, nor is there a focus on presenting information in different languages. Phase one of this project is to demonstrate how information can be presented audibly. That phase is underway and may give rise to further research in this area. Phase Two is to investigate translation technologies currently available and the potential for the adaptation or development of local technologies to translate information into local languages. This work is being undertaken by a private sector company and may lead to a longer term partnership.

Kiosk Technology Evaluation and Development

Currently, the IDRC is funding the evaluation phase of the Mamelodi Community Information Service (MACIS) developed by the CSIR in a black township outside Pretoria. Amongst other information and communications technologies, MACIS uses kiosks to deliver multimedia information to the Mamelodi community. The results of this evaluation phase may lead to other kiosk delivery projects.

2.5.3 Human resources and training

The focus of the South African Acacia strategy in the area of hrd and training will be on increasing capacities of users at the community level. There are many other issues - including the development of a base of high-level engineering and technical skills to support an extended network and user base - which while certainly important are perhaps are less so in the South African context than elsewhere in the region.

Telecentres as Training Centres in ICT Applications and Services

Given the diverse applications that will be found in the telecentres, they are the ideal location to serve as training centres themselves. These telecentres can become the community hub for building ICT skills in the general populationùwith particular emphasis on small-scale entrepreneurs and students. These telecentres could be operated as either private sector ventures or within the public service (e.g in the post office, school, etc). Partnerships with innovative ICT training establishments in the private sector or the NGO community and targeted at specific niche markets could underscore the important role of telecentres as community training facilities.

Training for Internet-Based Research, Information Collection and Web Publishing

The Alternative Information & Development Centre (AIDC) aims to increase the economic literacy of grass roots organisations and uses training in Internet access and Web content creation as a main tool. Two primary objectives underpin this project: (1) to facilitate greater access and use of the Internet amongst mass organisations, community- based organisations and NGOs so as to facilitate greater democratisation, flow and exchange of information; (2) to build the capacity of people who have been historically denied rights to information and who have traditionally been excluded from new communications technologies. Initial targets for the training provided by the project include trade unions, civic organisations, womenÊs organisations and NGOs. The focus is on staff and office holders in these organisations, with a particular focus on organisations located in peri-urban and rural settings. A second target audience for this project is individual activists, in particular black women and youth, who have historically been excluded from the exchange and flow of information.

SANGONet Technical Training Project

SANGONet is the original non-profit ISP in South Africa and has been a major source of training. It is also an original member of the Association of Progressive Communications and is well connected into regional and international networks. The Acacia/SANGONet partnership referred to in the next section is likely to include joint work on the evaluation and implementation of training approaches likely to be most effective at the community level to promote Internet use and the development of local content.

2.6 Research

The aim of the research component of the Acacia strategy for South Africa is twofold: to encourage research on the linkages between access to and use

of ICTs at the community level and the capacities of communities to define and address their own development problems; and to promote ICTs as an appropriate means of linking research organisations working on development issues particularly in the NGO sector.

The initiatives identified below address these two issues.

* Alternative Information & Development Centre Research Programme

The Alternative Information & Development Centre (AIDC) mentioned above has developed a comprehensive research programme focusing on the impact of globalization on local communities. The CentreÊs research programme is designed to assess the impact of the following issue areas on the ability of community-based organisations to articulate their people-centred development programmes in a national and global context. These issue areas include: the instruments of globalization; the governmentÊs new macro economic policyùGEAR; the Uruguay Round of the GATT; and Apartheid era foreign debt. Reinforcing AIDCÊs program in this area could lead to significant community input into the information society policy process.

* South African Research NGO Sector

While there are a number of coalitions of NGOs in South Africa, a mechanism to aggregate the activities of the research sector is not yet in place. This project proposes to create a Research NGO sector within the South African National NGO Coalition. In addition to bringing together this important community of interests, the project will explore how emerging technologies can enhance communication within the NGO sector and more effectively link the results with policy work and programme implementation. This project will also identify and encourage research on ICT and development issues. This also will strengthen civil society inputs to the information policy process.

SANGONET Needs Analysis

SANGONet has operated an information access and content development facility for many years and has accumulated substantial quantities of raw data on usage and content development experiences which remain unanalysed. Analysis could contribute substantially to developing a clearer idea of the types of information service and content considered valuable by its users, mainly in the NGO and individual user sectors.

2.7 Implementing partners

As a general rule, IDRC will not undertake large scale Acacia projects in South Africa unless in partnership with other funding sources.

CSIR

With a staff compliment of over 3000, the CSIR is considered to be one of the leading research and development facilities in Africa. In addition to its capacity in a number of science and technology areas, the CSIR has a targeted business units focusing on information and communications technologies and their application and dissemination. A formal Memorandum of Understanding (MOU) is being developed between the IDRC and CSIR which will focus on identifying and developing technical solutions to remote access problems and to testing and implementing these solutions in Tele-centers and SchoolNet sites throughout the region during the first five-year phase of the Acacia initiative. Other areas of cooperation under consideration include co-investment in promising technological innovations, joint pilot projects and awareness building and promotional activities. A partnership with CSIR could enhance IDRCÊs Acacia delivery capabilities throughout sub-Saharan Africa.

DBSA

Several potential projects are currently being explored with the Development Bank of Southern Africa (DBSA). The DBSA is restructuring to be able to play a more supportive role in the development of information and communications infrastructure in the region and beyond. It is also exploring modalities to be more supportive of the overall thrust of the AISI.

SANGONet

The Southern African NGO Network (SANGONet) is one of the leading non-profit, community oriented Internet service and support organisations in the Southern African region. Although not yet formalised as such, the de facto partnership between IDRC and SANGONet is exhibited through many of the projects throughout this Acacia strategy document.

COSATU

In South Africa, the Congress of South African Trade Unions (COSATU) and its affiliated research institute (the National Labour and Economic Development InstituteùNALEDI) are two of the leading voices exploring the impact of globalization and the information economy on local communities. A potential partnership with COSATU could involve strengthening communications links between its member unions and their decentralised

offices; supporting linkages with the Alternative Information & Development Centre to reinforce grass roots inputs on national and global economic issues and the implementation of the workplace Learning Centre concept.

The Private Sector

A number of partnerships are under discussion with private sector suppliers of technology and content. A private sector round table will be held on February 7 to explore together opportunities and interests.

The Local Donor Community

Initial consultation with representatives of many local donors indicate an interest in collaborating with IDRC on specific projects.

Canadian Partnerships

Canadian connections with respect to SchoolNet and Youthnet opportunities are being explored during the next weeks. Results will be incorporated into the next version of the strategy.

2.8 Reinforcing Community Voices: The SCS Methodology

Given that one of the primary objectives of the entire Acacia initiative is to increase community use of information and communications technologies to define and resolve their own social, economic, political and development problems, the implementation strategy must build in a strong evaluation component. The primary tool for accomplishing this evaluation will be the Sentinel Community Surveillance (SCS) methodology. SCS combines modern epidemiology and opinion research techniques with qualitative Rapid Assessment Procedures to gather evidence while involving clients in the process of evidence-based planning. First developed with IDRC support to promote community participation in health planning, the method is now used to collect and to disseminate information on a broad range of concerns. From agriculture to education, from the impact of land mines to monitoring child rights, from public transport to government corruption and the justice system, the topics to which SCS has been applied have been applied have continually broadened thematically and geographically. Sentinel communities have been established in nearly forty countries over the last decade wit the support of the World Bank, UNICEF, WFP, UNDP and UNHCR.

SCS follows a rigorous, tightly-focused process of fact-finding, analysis and downloading of results. After review of existing information on the proposed topic and population, a careful selections of sentinel communities ensures a representative sample. Fact-finding tools designed to produce

both quantitative and qualitative evidenceùhousehold questionnaires, institutional reviews, key informant interviews, focus groups discussions and, where called for, simple environmental or clinical testsùare then employed by local survey teams trained on site by CIET Research Fellows.

By including feedback of evidence to communities as an integral part of the information management process, the methodology ensures that the community voice is brought into the analysis of evidence and the search for solutions. Even the most remote communities contribute to decision and policy making. The substantial body of evidence includes quantitative data on coverage costs and impact of particular services, programmes and interventions. But, from the feedback and ensuing discussions, it also includes community-led solutions and strategies for action. The combination of evidence and solutions is then communicated beyond the sentinel sites to at least three major stakeholders: policy makers, service workers and the communities not involved in the sentinel process. SCS is thus one very concrete way of increasing citizen participation in planning and governance, disseminating the evidence for wider action.

In order to ensure that the various projects implemented under the framework of the Acacia South African strategy, the SCS methodology will be used continuously and extensively to monitor and evaluate the relevance of these projects to the communities involved. A certain percentage of the budgets of all South Africa Acacia projects will be allocated to impact assessment and evaluation.

3. Conclusions

This strategy must be seen as a work in progress. It represents our current best thinking - but the field, and the sets of players, are dynamic. We believe it provides a sound starting point for Acacia in South Africa. We believe also that elements of the program will link naturally into Southern African and Sub-Saharan African programs.